4. (Amended) The apparatus of Claim 1, where a screw channel is provided at the input of said mixer and flowingly connected to control the flow rate mixer input.

5. (Amended) The apparatus of Claim 1, where an output flight is flowingly connected to a downstream flight of said mixer section.

6. (Amended) The apparatus of Claim 1, where an output flight is flowingly connected to a channel of said extruder mixing section.

15. (Amended) The apparatus of Claim 14, wherein at least some of said ~~non-inlet~~cross-axial channels are bounded by a flight on two sides.

17. (Amended) The apparatus of Claim 1, where resistance devices are provided on said screw to force said plastic material into said ~~outlet channels~~output.

19. (Amended) The apparatus of Claim 1, wherein there are multiple flowingly connected inlet flights.

20. (Amended) The apparatus of Claim 1, wherein there are multiple flowingly connected outlet flights.

REMARKS

We have noted the Examiner's comments in regard to requirement for restriction, and agree that the claims in this case are 1-20, with the right to submit one or more divisional applications directed to non-elected subject matter.

We have noted the Examiner's comments under §112 in regard to the meaning of the terms "connected" and "unconnected" and have amended Claim 1 in order to indicate that this means a flowing connection which, of course, enables the plastified material to flow from one section to another section. While all parts of an extruder screw are indeed parts of a single screw, the unique flow passages cleverly contrived in the Applicant's extruder mixer have highly unique flow passages, and we believe the distinction is clearly pointed out by the introduction of the word "flowingly". In the event that the Examiner prefers another word conveying this novel concept, we would appreciate discussing the same at the Examiner's convenience.

Similarly, we have amended the expression "subsequent" and substituted --downstream-- to indicate that the cross-axial pump is downstream of the inlet channel.

Thus, as amended, we earnestly submit that Claim 1 is free of objection based upon §112, and allowable because of its sharp distinctions over the prior art. Appropriate complimentary revisions have been made in Claims 3, 4, 15 and 17.

Turning now to the sharp distinctions over the prior art:

1. Araki Inlet: In Araki, the grooves 5, are bounded on two sides (between the flights). In Applicant's invention, the first inlet channel is bounded by a flight *on one side.*

2. Araki Channels and Cross-Axial Pumps: The Araki channels and pumps are specifically located between spires, please see Col. 2, lines 11-20.

> The screw according to the present invention has at least one feed helix extending helically *therearound*, and the surface of the screw between the spires of the helix are tapered inwardly from a trailing spire toward a

preceding spire. The surface between the spires has ribs thereon, and the outer surfaces of the ribs are inclined at the same angle at which the surface is tapered. *The ribs have the longitudinal axes thereof at a lead angle to the spires of the helix which is between 50 and 70 degrees* and is in the same direction as the spires of the helix (emphasis added).

In review, Araki discloses an arrangement -- channels and cross-axial pumps -- bounded by spires. Applicant's invention is not contained by spires, much less at specific angles to the spires. Further, in Applicant's invention, the first inlet channel is structurally distinct from Araki because it is bounded by a flight on one side where Araki is bounded by the spires on two sides. Therefore, Araki does not disclose or suggest the Applicant's novel concept.

Regarding the other references:

1. Housz Inlet: The Housz inlet 17, is bounded at least on two sides by dams 16 and, essentially first ridge 13 (leaves such a gap...that molten material cannot...pass between the ridge and the inner surface of the housing, Col. 5, lines 34-37.) Applicant's invention has its first inlet channel bounded only on one side.

2. Housz Inlet and Discharge Communicates Through an Intermediary: The Housz discharge channel 18, is structurally arranged such that it communicates with inlet channel 17 through an intermediary second ridge 14. In Applicant's invention, the first inlet channel communicates both upstream and downstream without an intermediary element as in Housz.

3. Housz Discharges Do No Communicate with Other Inlets: Housz specifically distinguishes his entry channel 17 from his outlet channel 18 by stating that the channel 17 is open to the melting section 6, (Col. 6, lines 45-46) and the Housz channel 18 is said to be open to the screw pump 7 (Col. 5, lines 46-47) Because the Housz discharge 18 communicates downstream with pump 7, he does not anticipate communication with other

inlet channels. In Applicant's invention, all discharges communicate with all inlets.

4. Housz Inlets Do Not Communicate with All Discharges: In Applicant's invention, all the inlets communicate with all the discharges.

5. Housz Inlets Do Not Communicate with Other Inlets: In Applicant's invention, all the inlets communicate with all other inlets.

An early and favorable action is accordingly requested.

Respectfully submitted,

Austin R. Miller
Reg. No. 16,602
T. Daniel Christenbury
Reg. No. 31,750
Attorney for Applicant

ARM:dh
(215) 563-1810

In the Claims (clean copy as amended)

1. (Amended) An extruder mixer for plastified material comprising a rotatable elongated screw and means for rotating said screw, said screw having a mixing section adapted to mix plastified materials, said mixing section having an inlet channel flowingly connected to a cross-axial pump constructed and arranged to feed a subsequent downstream inlet channel, wherein said subsequent downstream inlet channel is flowingly connected to further feed said mixture to at least one downstream cross-axial pump that is bounded by a flight on at least one side of said downstream cross axial pump, wherein said extruder mixer further includes an output to flowingly deliver the resulting plastic mixture.

3. (Amended) The apparatus of Claim 1, wherein an upstream feeder is flowingly connected to cause and to control input feed of mixable materials.

4. (Amended) The apparatus of Claim 1, where a screw channel is provided at the input of said mixer and flowingly connected to control the flow rate mixer input.

5. (Amended) The apparatus of Claim 1, where an output flight is flowingly connected to a downstream flight of said mixer section.

6. (Amended) The apparatus of Claim 1, where an output flight is flowingly connected to a channel of said extruder mixing section.

15. (Amended) The apparatus of Claim 14, wherein at least some of said cross-axial channels are bounded by a flight on two sides.

17. (Amended) The apparatus of Claim 1, where resistance devices are provided on said screw to force said plastic material into said output.

19. (Amended) The apparatus of Claim 1, wherein there are multiple flowingly connected inlet flights.

20. (Amended) The apparatus of Claim 1, wherein there are multiple flowingly connected outlet flights.